IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A device information generating device comprising:

a device key matrix storage unit configured to store a device key matrix in which device keys are arranged in a two dimensional manner; ~~and~~

a device key <u>selecting</u> ~~generating~~ unit configured to select ~~one of the~~ device keys <u>according to a device ID, each device key being selected from device keys</u> in each one dimensional array of the device key matrix according to each numeral of a device ID[[,]]<u>; and</u>

~~wherein the selected device keys and the device ID are the device information~~ <u>a device information generating unit configured to generate a device information based on the selected device keys and the device ID</u>.

2. (Currently Amended) The device information generating device according to claim 1, wherein said device key generating unit selects ~~one of~~ <u>a</u> device <u>key from the device</u> keys in each row of the device key matrix according to each numeral of the device ID.

3. (Currently Amended) <u>The</u> [[A]] device information generating device <u>according to claim 1, wherein said device information generating unit calculates a path function value based on the selected device key, the path function indicating a path of the device ID in a tree formed of all possible combinations of the numerals forming the device ID</u> ~~comprising:~~

~~a device key matrix storage unit configured to store a device key matrix in which device keys are arranged in a two dimensional manner;~~

~~a device key generating unit configured to select one of the device keys in each one dimensional array of the device key matrix according to each numeral of a device ID; and~~

~~a path function calculating unit configured to calculate a path function value based on the selected device keys, the path function indicating a path of the device ID in a tree formed of all possible combinations of the numerals forming the device ID,~~

~~wherein path function value and the device ID are the device information.~~

4. (Currently Amended) The device information generating device according to claim 3, wherein said device key <u>selecting</u> ~~generating~~ unit selects ~~one of~~ <u>a</u> device <u>key from</u> <u>the device</u> keys in each row of the <u>device</u> key matrix according to each numeral of the device ID.

5. (Original) A revoke control data generating device comprising:

a device key matrix storage unit configured to store a device key matrix in which device keys are arranged in a two dimensional manner;

a device key generating device configured to select one of the device keys in each one dimensional array of the device key matrix according to each numeral of a device ID;

an encrypting unit configured to encrypt the selected device keys by a master key; and

a revoke control data generating unit configured to generate revoke control data including an output of said encrypting unit and a path function indicating a path of the device ID to be revoked in a tree formed of all possible combinations of the numerals forming a device ID.

6. (Original) The revoke control generating device according to claim 5, wherein said device key generating device selects one of device keys in each row of the key matrix according to each numeral of the device ID.

7. (Original) A content utilizing device comprising:

a device information storing unit configured to store a device information including an arrangement of device keys and a device ID;

a key decrypting unit configured to receive revoke control data including encrypted data keys which are encrypted by a master key and decrypt the encrypted data keys to obtain the master key; and

a content decrypting unit configured to receive content data which is encrypted by the data keys and decrypt the encrypted content data using the master key, wherein if the device information is included in the received revoke control data, the content utilizing device is revoked such that the key decrypting unit does not obtain the master key.

8. (Original) The content utilizing device according to claim 7, wherein said revoke control data comprises a path function indicating a path of the device ID in a tree formed of all possible combinations of the numerals forming the device ID.

9. (Original) A device information generating method comprising:

selecting one of device keys in a device key matrix in which device keys are arranged in a two dimensional manner in each one dimensional array of the device key matrix according to each numeral of a device ID, wherein the selected device keys and the device ID are the device information.

10. (Original) The device information generating method according to claim 9, wherein one of the device keys in each row of the device key matrix is selected according to each numeral of the device ID.

11. (Original) A device information generating method comprising:

selecting one of device keys in a device key matrix in which device keys are arranged in a two dimensional manner in each one dimensional array of the device key matrix according to each numeral of a device ID; and

calculating a path function value based on the selected device keys, the path function indicating a path of the device ID in a tree formed of all possible combinations of the numerals forming the device ID,

wherein path function value and the device ID are the device information.

12. (Original) The device information generating method according to claim 11, wherein one of the device keys in each row of the key matrix is selected according to each numeral of the device ID.

13. (Original) A revoke control data generating method comprising:

selecting one of device keys in a device key matrix in which device keys are arranged in a two dimensional manner in each one dimensional array of the device key matrix according to each numeral of a device ID;

encrypting the selected device keys by a master key; and

generating revoke control data including the encrypted-selected device keys and a path function indicating a path of the device ID to be revoked in a tree formed of all possible combinations of the numerals forming a device ID.

14. (Original) The revoke control generating method according to claim 13, wherein one of the device keys in each row of the key matrix is selected according to each numeral of the device ID.

15. (Original) A content utilizing method comprising:

receiving revoke control data including encrypted data keys which are encrypted by a master key and decrypting the encrypted data keys to obtain the master key; and

receiving content data which is encrypted by data keys stored in a content utilizing device and decrypting the encrypted content data using the master key, wherein if device information formed of a device information including an arrangement of the device keys and a device ID is included in the received revoke control data, the content utilizing device is revoked such that the encrypted data keys are not decrypted.

16. (Original) The content utilizing method according to claim 15, wherein said revoke control data comprises a path function indicating a path of the device ID in a tree formed of all possible combinations of the numerals forming the device ID.

17. (Original) An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein, the computer readable program code means comprising:

computer readable program code means for causing a computer to select one of device keys in a device key matrix in which device keys are arranged in a two dimensional manner in each one dimensional array of the device key matrix according to each numeral of a device ID;

computer readable program code means for causing a computer to encrypt the selected device keys by a master key; and

computer readable program code means for causing a computer to generate revoke control data including the encrypted-selected device keys and a path function indicating a path of the device ID to be revoked in a tree formed of all possible combinations of the numerals forming a device ID.